
DIRECTLY COMPETING POLICIES: THE GROWTH OF INTERNET TELEPHONY AND THE FUTURE OF THE UNIVERSAL SERVICE FUND

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I. INTRODUCTION

Internet telephony has arrived and it appears that the new technology, employing packet-switched networks to send voice over the Internet, is the latest wave in the digital revolution. Packet-switched networks, which send voice in "packets" over the Internet, already have demonstrated to be a more efficient and cost-effective technology than traditional circuit-switched networks ("Plain Old Telephone Service" or "POTS").¹ Although it has been only a decade since its inception, analysts predict that an estimated 300 million people will subscribe to Internet telephony (voice over Internet protocol) by 2003.² The growing popularity of Internet telephony threatens to make the traditional circuit-switched networks of voice telephony obsolete. Consumers welcome the substantial savings on their long-distance telephone bills while the government greets another technological innovation to support the economy with open arms and a deregulatory policy. In addressing the Voice Over Net Conference, former FCC Chairman Kennard remarked "that once Americans discover the cost and functionality of Internet protocol ("IP") telephony, they will leave the circuit-switched world forever."³

Although faced with heavy opposition from incumbent telecommunications carriers, Congress has adopted a "wait and see" approach before redefining the current regulatory framework in light of Internet telephony.⁴ Moreover, Congress plans to continue a forbearance policy, following a thirty-year practice of deregulating the Internet to allow the market to self-regulate and to encourage new technologies to flourish.⁵ The Federal Communications Commission ("FCC" or the "Commission") has enforced congressional intent codified in the Telecommunications Act of 1996 (the "1996 Act")⁶ by not defining Internet telephony as a regulated "telecommunications carrier"⁷ but as a deregulated "information service."⁸ In its *1998 Universal Service Report to Congress*, the FCC noted that it would reconsider this deregulatory stance because Internet telephony is available phone-to-phone and closely resembles the heavily regulated telecommunications services.⁹ Congress has subsequently responded to the FCC's recommendations with proposed legislation to prohibit regulatory fees on the Internet and Internet telephony.¹⁰

Congress' recent initiative to foster a competitive market in the telecommunications industry al-

¹ See Tuan N. Samahon, *The First Amendment Case Against FCC IP Telephony Regulation*, 51 FED. COMM. L.J. 493, 496-97 (1999) [hereinafter Samahon].

² FCC Chairman William E. Kennard, Remarks Before the Voice Over Net Conference (Sept. 12, 2000) (transcript available at <http://www.fcc.gov/Speeches/Kennard/2000/spwek019.html>) [hereinafter *Kennard's Remarks Before the Voice Over Net Conference*].

³ *Id.*

⁴ Federal-State Joint Board on Universal Service, *Report to Congress*, 13 FCC Rcd. 11,501, 11,541, 11,543, paras. 83 n.171, 90 (1998) [hereinafter *1998 Universal Service Report to Congress*].

⁵ FCC, OPP WORKING PAPER 31, THE FCC AND THE UN-

REGULATION OF THE INTERNET (authored by Jason Oxman) (1999), available at <http://www.fcc.gov/opp/workingp.html> [hereinafter Oxman].

⁶ Pub. L. No. 104-104, 110 Stat. 56, 61 (1996) (codified in scattered sections of 47 U.S.C. §§ 151-710).

⁷ 47 U.S.C. § 153(44) (1994 & Supp. IV).

⁸ *Id.* at § 153(20).

⁹ *1998 Universal Service Report to Congress*, 13 FCC Rcd. at 11,541, para. 83.

¹⁰ Internet Access Charge Prohibition Act of 2000, H.R. 1291, 106th Cong. § 1 (2000); see also Internet Telephony Access Charge Prohibition Act of 2000, H.R. 4769, 106th Cong. § 2 (2000).

ready has proven quite successful with copious selections and reduced prices for consumers. However, long-standing public policy initiated through the Universal Service Fund ("USF") stands threatened as Internet-based telecommunication services become increasingly popular.¹¹ The \$2.25 billion USF that supports rural areas and low-income families with phone service, and rural health care facilities, schools and libraries with Internet access, subsists through mandatory contributions from telecommunications carriers required under the 1996 Act.¹² The USF now faces a precarious future as long-distance traffic diverts from the circuit-switched networks to the Internet, thereby circumventing regulatory fees and higher costs. The question of whether to regulate and apply the outdated regulatory scheme of the 1996 Act to this new hybrid technology again has resurfaced in anticipation of a potential threat to this existing social welfare policy. As more consumers switch from traditional telecommunications services to Internet telephony, the USF and the telecommunications revenues upon which the USF relies may be adversely affected.¹³ Consequently, Congress will not enact legislation to enable the FCC to regulate Internet telephony services until such services significantly undermine the customer base of traditional carriers, which directly support universal support mechanisms.

This comment explores the current quandary of whether to regulate Internet telephony in order to secure future support for the USF. Part II of this comment provides a brief technical overview and history of Internet telephony, as well as a comparison to traditional voice telephony. Part III

addresses the government's regulatory treatment of Internet telephony under the 1996 Act, and the FCC's application of telecommunications carrier and information service definitions to Internet telephony. Part IV explores the regulatory debate and the public policy reasons advocated by proponents and opponents of regulating Internet telephony. Part V discusses the FCC's recommendations and Congress' response to mounting pressure to regulate Internet telephony. Finally, Part VI anticipates the conceivable future of regulating Internet telephony and questions the ominous vitality of the USF without a regulatory scheme to plan for an industry with directly competing policies.

II. HISTORY OF INTERNET TELEPHONY

A. Distinguishing Internet Telephony From Voice Telephony: A Technical Overview

Traditional voice telephony, carried on the public-switched telephone network ("PSTN"), uses circuit-switched technology for voice transmission.¹⁴ Upon placing a call, the local loop remains dedicated to the customer for the duration of the communication and accounts for both the actual conversation as well as the silence.¹⁵ This connection, reserved for the particular call, is freed only when the parties terminate the call and break the connection.¹⁶

Outdated circuit-switched technology utilizes the telephone lines in an ineffective manner as compared with voice-over Internet capabilities.¹⁷ Internet calls use the network, which ride on top of the telephone lines, for the time needed to

¹¹ See 1998 *Universal Service Report to Congress*, 13 FCC Rcd. At 11,617-18 (separate statement of Chairman William E. Kennard).

¹² *In re Federal-State Joint Board on Universal Service, Report and Order*, 12 FCC Rcd. 8776, 9002, 9093, paras. 425, 608 (1997) [hereinafter *Universal Service Order*].

¹³ In its 1998 *Universal Service Report to Congress*, the FCC acknowledged concerns that "as new communications services such as Internet access and IP telephony grow, traffic will shift away from conventional services, thus draining the support base for universal service." 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,548, para. 98 n.203; see also, Kathleen Wallman, *A Birthday Party: The Terrible or Terrific Two's? 1996 Federal Telecommunications Act*, 51 FED. COMM. L.J. 229, 238 (1998) (reasoning that if policy-makers interpreted Internet telephony providers not to constitute a telecommunications, "such a conclusion would subtract revenues from the universal service system in a drastic way that could make the system unsustainable").

¹⁴ Alfred Mamlet, *Internet Telephony: Convergence, Conflicts, and Confusion*, AM. B. ASS'N CENTER FOR CONTINUING LEGAL EDUC. NAT'L INST., D-1 (1998) available at N98RHTB ABA-LGLED D-1 [hereinafter Mamlet] (citation to Westlaw materials).

¹⁵ HENK BRANDS & EVAN T. LEO, *THE LAW AND REGULATION OF TELECOMMUNICATIONS CARRIERS* 234 (1999) [hereinafter BRANDS & LEO].

¹⁶ *Id.* The dedication of an entire line to one telephone call causes local Bell Operating Companies to lose money. Both silence and voice are transmitted on circuit-switched calls, consequently producing inefficient use of the line. Local carriers prefer business customers who often place frequent and efficient calls, which creates more revenue for the companies through terminating and originating fees. *Id.*

¹⁷ *Id.* Cellular telephones also use packet-switching technology. See Gary Krakow, *Free Phone Calls-No Kidding!*, MSNBC.COM, at <http://www.msnbc.com/news/415423.asp?cp1=1> (June 2, 2000) [hereinafter Krakow].

send each packet.¹⁸ By sharing network paths, Internet telephony allows numerous packets of voice and data to travel simultaneously over one line.¹⁹ Internet protocol converts voice into digital data, and compresses and divides the data at the source into "packets" that include information identifying the receiver.²⁰ Each packet independently travels across different Internet paths of the network, compared to the predetermined route of voice in circuit-switched telephony.²¹ Upon arrival at the designated address, the network reassembles the digital packets in the original order and converts the data back into voice.²² Unlike POTS, the efficient transmission of packets of voice and data across the network alleviates the financial burden of telephone carriers when customers utilize a single dedicated wire for both voice and data.²³

B. The Progression of Internet Telephony Technology Over the Past Five Years

Internet telephony first manifested itself in a personal computer-to-personal computer ("PC-to-PC") model with the introduction of VocalTec's software in early 1995.²⁴ The Internet telephony applications of the early years required two parties to have compatible software and to be online at the same time for their multimedia computers to serve as a telephone.²⁵ Each computer, equipped

with an Internet Service Provider ("ISP") account, a sound card, speakers and a microphone allowed parties to speak over the Internet.²⁶ The need to use compatible software, and the logistics of placing a call made the technology awkward and significantly more inconvenient than dialing a party using a telephone. Additionally, the latent technology produced poor sound quality analogous to the old-fashioned "ham radio."²⁷ Enthusiastic telephony hobbyists, however, found the rudimentary and sometimes unreliable nature of the software a minor burden compared to the financial savings gained by re-routing long-distance calls to evade the per-minute charges levied by the major long-distance telecommunication carriers.²⁸

Within a year of the introduction of Internet telephony software to the market, gateway technology enabled telephone circuit-switched networks to link with the Internet's new packet-switched networks.²⁹ The technology of Internet telephony thus evolved to allow one party using a multimedia PC to dial another party using a conventional telephone for the first time.³⁰ The Internet telephony gateway, located in the same geographical region as the conventional telephone user, operates to translate a party's voice transmission to the digital information ultimately read by the communicating party's PC.³¹

The innovation of the gateway technology to

¹⁸ Kenneth Terrell, *Making Phone Calls on the Web Generates Static*, U.S. NEWS & WORLD REP., July 10, 2000, at 56, available at <http://www.usnews.com/usnews/issues/000710/nycu/etel.htm> [hereinafter Terrell].

¹⁹ *Internet Telephony: Growing Up*, ECONOMIST, May 2, 1998, at 56 [hereinafter *Internet Telephony: Growing Up*].

²⁰ *Id.* at 57.

²¹ *Id.*

²² *Id.* In phone-to-phone IP telephony services, the analog-to-digital conversions take place at the IP gateways. However, in PC-to-PC telephony, self-installed software generally provides this function. See BRANDS & LEO, *supra* note 15, at 239.

²³ BRANDS & LEO, *supra* note 15, at 234.

²⁴ DIALOGIC, IP TELEPHONY BASICS, at <http://www.dialogic.com/solution/internet/4070web.htm> (last visited Jan. 15, 2001) [hereinafter IP TELEPHONY BASICS]; VOCALTEC, ABOUT VOCALTEC, available at http://www.vocaltec.com/about/aboutus_frame.htm (last visited Jan. 22, 2001) (credited for introducing the first Internet phone).

²⁵ Marianne Murray Buechner, *Net Talk is Cheap*, TIME, June 1, 1998, at 74 [hereinafter Buechner].

²⁶ *Id.* (finding that IP telephony's "first incarnation" through PC-to-PC use appealed to only a niche market).

²⁷ Critics of early PC-to-PC telephony derided the early software products for poor sound quality and delayed transmission. Packet-switching technology splits voice into "pack-

ets" that are transmitted through the heavily traveled digital highway. Delays in voice are attributed to the split-second lag time needed to send packets through routers, which direct the packets across the networks. While travelling, the digital packets often are delayed, shuffled out of the original order or even lost before reassembled back into voice. Complaints consisted of fuzziness, voice echoes and clipped words. Deborah Branscum, *A Cheaper Way to Phone; Internet Long-Distance Services Can Save You Money*, NEWSWEEK, Mar. 16, 1998, at 80 [hereinafter Branscum], see also Buechner, *supra* note 25, at 74; see also Larry Armstrong, *You're Coming Over Loud—And Almost Clear*, BUS. WK., Oct. 27, 1997, at 116 [hereinafter Armstrong].

²⁸ PC-to-PC models did not support full duplex conversations like the telephone. Only one party could speak at a time, similar to communicating with walkie-talkies. See Henry E. Crawford, *Internet Calling: FCC Jurisdiction Over Internet Telephony*, 5 COMM'LAW CONSPICUOUS 43, 44 (1997) [hereinafter Crawford].

²⁹ The installment of gateways was instrumental to bringing IP telephony into the mainstream. See IP TELEPHONY BASICS, *supra* note 24.

³⁰ MSN.COM, COMMON QUESTIONS ABOUT TELEPHONY, at <http://msn.zdnet.com/msn.zdet/story/0,12461,2654419-hud00025intp,00.html> (last visited Sept. 3, 2000) [hereinafter COMMON QUESTIONS ABOUT TELEPHONY].

³¹ *Id.*

bridge the gap between circuit-switched and packet-switched networks eventually led to the construction of enough gateways to eliminate the need for a PC in IP telephony communications.³² Phone-to-phone telephony resembles its PC-to-phone predecessor; however, two gateways are required to connect to the telephone and Internet worlds.³³ To allow for a full duplex, or two-way conversation, one gateway must digitize the telephone signal, compress it into packets and route it over the Internet.³⁴ Simultaneously, a second gateway reverses the process for digitized packets arriving from the network and destined for the telephone.³⁵ The capability to converse contemporaneously, coupled with the installation of private Internet networks that do not have to compete with the crowded public Internet, has alleviated sound quality problems and markedly improved Internet telephony technology since its recent evolution.³⁶

C. Why All the Hype?

Developments in the Internet telephony industry have encouraged this relatively new market to expand exponentially.³⁷ Once viewed as a haven for "geeks" trying to "beat . . . the system,"³⁸ the IP telephony market has been pushed to the verge of mainstream technology with consumers logging on and utilizing an estimated 2.5 billion minutes of "Internet talking time" in 1999 alone.³⁹ Since its modest debut only five years ago, the explosion

of interest in Internet telephony has some researchers forecasting this new market to be worth billions.⁴⁰ Surpassing all expectations, the FCC now predicts that 15% of the long-distance traffic will travel via the Internet by 2005,⁴¹ compared to Forrester Research's once-lofty estimate of 4% in 1997.⁴²

With the implementation of private or corporate Internet networks, a growing number of companies now offer Internet telephony services to route long-distance calls through the Internet.⁴³ Using phone-to-phone telephony, a party need not use the cumbersome equipment once required by the PC model. The Internet services of today work easily and their operation is comparable to the process of using a calling card.⁴⁴ In order to place a call with one of the IP telephony services, a party must set up an account to receive a local or toll-free access code and identification ("ID") code.⁴⁵ Once the party dials the access code, ID code and desired telephone number, the access number connects the call to the gateway where the analog voice signal translates into digital packets in order to travel the Internet.⁴⁶ Unlike earlier telephony models, which required a party to know the PC user's IP address, the only information needed is the receiving party's telephone number.⁴⁷

Although Internet telephony offers more user-friendly technology, substantial long-distance savings are largely responsible for this new service's

³² Denise Pappalardo & Tim Greene, *Voice Over IP Gathers Steam*, CNN.COM, at <http://www.cnn.com/2000/TECH/computing/01/11/voice/ip/idg/index/html> (Jan. 11, 2000) [hereinafter Pappalardo & Greene] (quoting International Data Corp.'s estimate that service providers will spend almost \$1 billion installing voice-over-IP gateways globally by the close of 2001).

³³ COMMON QUESTIONS ABOUT TELEPHONY, *supra* note 30.

³⁴ IP TELEPHONY BASICS, *supra* note 24.

³⁵ *Id.*

³⁶ *Id.*; FCC, OPP WORKING PAPER 29, DIGITAL TORNADO: THE INTERNET AND TELECOMMUNICATIONS POLICY (authored by Kevin Werbach) (1997), available at <http://www.fcc.gov/opp/workingp.html> [hereinafter Werbach] (distinguishing the gateway providers policy of charging per-minute rates for IP telephony services from the "free" calling available through PC-to-PC IP telephony products).

³⁷ Since 1997, the stocks of the 55 companies listed in Piper Jaffray's Net Telephony Index have grown sevenfold. See Jim Kerstetter, *Where the Money Will Be*, BUS. WK., May 1, 2000, at 196 [hereinafter Kerstetter].

³⁸ *Internet Telephony: Growing Up*, *supra* note 19, at 56.

³⁹ Terrell, *supra* note 18, at 56.

⁴⁰ Researchers vary in speculating IP telephony's future

market value. See Kerstetter, *supra* note 37, at 196 (citing Probe Research Inc.'s predictions that Internet telephony services will reach \$5.3 billion in 2003); see also Arlyn Tobias Gajilan, *Reach Out on the Net: Long Distance for the Cost of a Local Call*, NEWSWEEK, Apr. 12, 1999, at 80 (predicting that the market will reach \$2 billion by 2003); see also Armstrong, *supra* note 27, at 118 (citing Forrester Research Inc.'s \$2 billion estimate of the Internet telephony market by 2004).

⁴¹ Kennard's Remarks Before the Voice Over Net Conference, *supra* note 2.

⁴² Armstrong, *supra* note 27, at 118; see also Joshua Quittner, *Phone Free*, TIME, Oct. 19, 1998, at 126 (estimating that half of the long-distance traffic will travel over the Internet by 2010).

⁴³ An increased amount of both start-up companies and common carriers now offer IP telephony services, because they are lured by the one-fifth to one-tenth operating costs compared to traditional circuit-switched networks. See Nicholas C. Spatafore, *Stuck in the Middle*, TELEPHONY, Aug. 28, 2000, at 66 [hereinafter Spatafore].

⁴⁴ Branscum, *supra* note 27, at 80.

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ IP TELEPHONY BASICS, *supra* note 24.

growing popularity.⁴⁸ Internet-based telephony services are able to offer reduced prices for long distance by avoiding the heavily regulated circuit-switched networks that pay access fees to local exchange carriers ("LEC") and mandatory universal service fees imposed by the FCC.⁴⁹ Long-distance carriers typically pay an estimated 2.5 cents per minute in access charges to the LECs for originating and completing interstate calls on local networks and must contribute approximately 5.8% of annual company revenues toward universal support mechanisms.⁵⁰ Consequently, IP telephony services, which are free from regulation imposed on long-distance telephone carriers, are able to pass savings on to their consumers. As a sign that Internet telephony truly has arrived, major telecommunications long-distance carriers who have been eager to dismiss the nascent technology of Internet telephony startups as transient now are fighting to grab pieces of the new market.⁵¹

III. HOW A SERVICE IS DEFINED DETERMINES HOW THAT SERVICE IS REGULATED

A. The 1996 Telecommunications Act

The 1996 Act codified the distinct categories of "telecommunications service" and "information service."⁵² Currently, Internet telephony and re-

lated Internet services remain categorized as information services, whereas domestic and international long-distance services are subject to pervasive regulatory schemes imposed on telecommunications carriers.⁵³ Congress determined whether a particular service met rigorous regulatory mechanisms known as "telecommunications service" according to strict definitions set forth in the 1996 Act.⁵⁴ The 1996 Act defines "telecommunications" as "the transmission . . . between or among points specified by the user, or information of the user's choosing, without change in the form or content of the information as sent or received."⁵⁵ Under the 1996 Act, a "telecommunications service" means "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used."⁵⁶ Congress distinguishes "information service," however, as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications."⁵⁷

By separately codifying the telecommunications and information service categories in the 1996 Act, Congress attempted to draw distinctions between regulated telecommunications services and deregulated information services in order to bolster growth and development of the infant ad-

⁴⁸ See generally Net2Phone, at <http://www.net2phone.com> (last visited Jan. 15, 2001). Companies, such as the Internet telephony's market leader, Net2Phone, offer free PC phone calls or direct calling cards for phone-to-phone users with promotions to call anywhere in the world for only 3.9 cents per minute. See also Krakow, *supra* note 17 (finding that the Internet telephony software needed to place free telephone calls usually requires personal information so that advertisers can "profile" the consumer in order to target advertisements to them while online).

⁴⁹ IP telephony services providing international long distance escape tariffs imposed through international settlement agreements, which cost long-distance companies roughly 30 times more to terminate calls abroad. See Chérie R. Kiser & Sean M. Foley, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, *Regulation on the Horizon: Could Your IP Telephony Profits Become Subject to the High Cost of Telecommunications Regulation?*, 2 (2000) (on file with author) [hereinafter Kiser & Foley] (quoting Matt Bellows, *The Business Implications of IP Telephony*, 1, at <http://www.babson.org/students/mbellows/greenepaper.htm> (last visited Mar. 29, 2001)) (noting in this grant proposal that the average circuit-switched international telephone call costs \$1 per minute).

⁵⁰ *Id.*

⁵¹ Most notably, the market leader in IP telephony services, Net2Phone, attracted heavy investors. On August 11,

2000, AT&T finalized an agreement to invest \$1.4 billion in Net2Phone (32% economic stake). Yahoo! invested \$150 million in the company (5% stake) in March 2000. As of July 2000, Microsoft integrated Net2Phone into MSN Messenger. See NET2PHONE, NET2PHONE TIMELINE, at <http://www.net2phone.com/corporate/timeline.html> (last visited Jan. 15, 2001); see generally Net2Phone, at <http://www.net2phone.com> (announcing Net2Phone's partnership with Cisco Systems, Inc. to develop and market network management software for voice over IP on Sept. 18, 2000).

⁵² 47 U.S.C. § 153(20), (46) (codifying the Commission's earlier categories determined in *Computer II* of "basic" and "enhanced" services); *In re* Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), *Final Decision*, 77 F.C.C.2d 384, 419-21, paras. 93, 97 (1980), *reconsidered*, *Memorandum Opinion and Order*, 84 F.C.C.2d 50 (1980), *further reconsidered*, *Memorandum Opinion and Order on Further Reconsideration*, 88 F.C.C.2d 512 (1981), *aff'd*, *Computer and Communications Indus. Ass'n. v. FCC*, 693 F.2d 198 (D.C. Cir 1982), *cert. denied*, 461 U.S. 938 (1983).

⁵³ 47 U.S.C. § 153(20), (44).

⁵⁴ *Id.* at § 153(46).

⁵⁵ *Id.* at § 153(43).

⁵⁶ *Id.* at § 153(46).

⁵⁷ *Id.* at § 153(20).

vanced services industry.⁵⁸ Congress captured this sentiment in the 1996 Act's caption by outlining its goals of "promot[ing] competition and reduc[ing] regulation in order to secure lower prices and higher quality services . . . and encourag[ing] the rapid deployment of new telecommunications technologies."⁵⁹

When first enacted, the 1996 Act's distinctions appeared concrete and manageable. However, with the combination of government's deregulatory policies and a strong economy, the Internet and Internet services exceeded the bounds of the 1996 Act's neat definitions. The emergence of hybrid technology, most notably found in Internet telephony, comprises characteristics of both telecommunications and information services and does not fit smoothly into either statutory category.⁶⁰ The 1996 Act now appears outdated as it fumbles for direction in regulating an unpredictable industry with converging technologies.

B. Fitting Hybrid Technology Into Rigid Definitions

Early Internet telephony employed through PC-to-PC operation closely resembled information services when compared to the statutory definition of telecommunications as "between or among points specified by the user."⁶¹ PC-to-PC IP telephony users are limited to calling only those multimedia computer users with compatible software who are online at the same time.⁶² Vendors that create the necessary software and hardware applied in PC-to-PC telephony develop and produce a "product," which is not a service that

actually "transmits" information as defined in the 1996 Act by "telecommunications service."⁶³ The government felt satisfied that these former software limitations saved Internet telephony from meeting the statutory definition of telecommunications found in the 1996 Act.⁶⁴

The clear distinction between early IP telephony and telecommunications carriers blurred as advanced phone-to-phone technology emerged. The Commission's *1998 Universal Service Report to Congress* addressed phone-to-phone Internet telephony's resemblance to traditional carriers by noting that it "creates a virtual transmission path between points on the public switched telephone network."⁶⁵ The Commission further found in its *1998 Universal Service Report to Congress* that IP telephony services "d[o] not offer a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information."⁶⁶ Instead of finding that IP telephony services constitute "telecommunications carriers" within the meaning of the 1996 Act, the Commission refrained from expanding the statutory definition to include IP telephony without further direction from Congress.

IV. THE GREAT DEBATE: SHOULD INTERNET TELEPHONY BE REGULATED?

A. Favoring Competition Over Regulation

Presently, IP telephony and Internet-related services enjoy the safe harbor of regulatory freedom.⁶⁷ Proponents of this deregulatory policy

⁵⁸ When Congress drafted the 1996 Act, the Internet was still transitioning from a government project funded for the military to the extensive public network that exists today. Congress, however, had the foresight to promote advanced services and deployment of new technologies under the 1996 Act. Telephone Interview with Sean M. Foley, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo (Oct. 26, 2000) (on file with the author).

⁵⁹ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, 61 (1996) (codified in scattered sections of 47 U.S.C. §§ 151-710).

⁶⁰ William E. Kennard, *A New FCC for the 21st Century: Draft Strategic Plan*, 584 PLI/PAT 331, 335 (1999) (stating that Internet-based technologies "will continue to erode the traditional regulatory distinctions between different sectors of the communications industry").

⁶¹ 47 U.S.C. § 153(43).

⁶² See Crawford, *supra* note 28, at 48 (citing Gus Venditto, *Internet Phones: The Future is Calling*, INTERNET WORLD, June 1996, at 42).

⁶³ *Id.*

⁶⁴ In analyzing PC-to-PC IP telephony services, which provide only software and hardware at the customer premises, the Commission found that these vendors do not send transmissions defined as "telecommunications." The Commission further distinguished the IP telephony software that runs over the Internet from the ISPs that provide the actual Internet service. ISPs are only providing Internet access and cannot discern whether a particular customer is using IP telephony software. Accordingly, the Commission found that the ISPs do not appear to offer telecommunications services as defined under the Act. *1998 Universal Service Report to Congress*, 13 FCC Rcd. at 11,543, paras. 86, 87 (citing 47 U.S.C. § 153(51)).

⁶⁵ *Id.* at 11,544, para. 89.

⁶⁶ *Id.*

⁶⁷ In its *1998 Universal Service Report to Congress*, the Commission acknowledged that it had never before addressed the legal status of IP telephony. Although finding that certain phone-to-phone telephony services shared the "characteris-

credit the competitive open market for the economy's unprecedented growth spurred by budding new Internet technologies. In favoring competition over regulation, policy-makers argue "treating incumbents and newcomers in a market the same would only result in creating barriers to new entrants and killing innovation."⁶⁸

The fear of thwarting development and stifling competition has allowed consumers to benefit from a "regulatory bypass" because IP telephony services provide comparable service to POTS at significant savings.⁶⁹ If the same regulations faced by incumbent services burden IP telephony services, then consumers will lose their economic incentive to use a more economical Internet-based alternative to POTS.⁷⁰ Thus, the substantial gain realized by the public due to the Commission's regulatory forbearance offsets the cost that incumbent telecommunications stakeholders assume.⁷¹ The consumer wins in a highly competitive open market with reduced prices and unparalleled selection.⁷²

Even if Internet telephony warrants regulation, advocates of a competitive marketplace question the FCC's jurisdiction to regulate. The technology resembles a computer network more than a type of "wire communication" traditionally subject to FCC regulations.⁷³ Regulatory issues are further problematic, considering that the FCC cannot regulate software vendors associated with PC-to-PC telephony as telecommunications carriers because software and hardware are products and not services under the 1996 Act. Regarding phone-to-

phone Internet telephony, the FCC faces the impossible task of regulating ISPs carrying voice over the Internet, in which both voice and data packets travelling through the networks are virtually indistinguishable.⁷⁴ Additionally, ISPs argue for maintaining their current regulatory status by asserting that they already contribute to universal support mechanisms indirectly through their own purchases of telecommunications services.⁷⁵ In support of these various reasons to refrain from regulating Internet telephony, Congress expressed an intent in the 1996 Act to "preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, *unfettered* by Federal or State regulation."⁷⁶ In effect, Section 230 of the 1996 Act removes the FCC's ancillary jurisdiction over information services.⁷⁷

B. Governmental Regulation to Level the Playing Field

Proponents of regulating Internet telephony plead that the government unfairly gives special treatment to unregulated technologies that operate as telecommunications services. Proclaiming the familiar characterization—"if it looks like a duck, walks like a duck, quacks like a duck, it must be a duck"⁷⁸—current telecommunications carriers want Internet telephony regulated. Incumbent carriers fear the increasing strides that maturing IP telephony companies are making in the industry, and therefore are pushing to defend their

tics of 'telecommunications services' " within the meaning of the statute, the Commission declined to redefine such services under the 1996 Act without a "more complete record." *Id.* at 11,541, para. 83.

⁶⁸ Kennard's Remarks Before the Voice Over the Net Conference, *supra* note 2.

⁶⁹ Mamlet, *supra* note 14, at D-1.

⁷⁰ Samahon, *supra* note 1, at 517 (noting that if IP telephony surrenders its cost advantages to regulatory burdens, investors needed to fund the innovative technology will lose incentive to invest).

⁷¹ Robert M. Frieden, *Dialing for Dollars: Should the FCC Regulate Internet Telephony?*, 23 RUTGERS COMPUTER & TECH. L.J. 47, 59 (1997) [hereinafter Frieden].

⁷² Leonard J. Kennedy & Lori A. Zallaps, *If it Ain't Broke . . . The FCC and Internet Regulation*, 7 COMM'LAW CON-SPECTUS 17, 34 (1999) [hereinafter Kennedy & Zallaps].

⁷³ Crawford, *supra* note 28, at 47.

⁷⁴ Werbach, *supra* note 36, at 39-40.

⁷⁵ Oxman, *supra* note 5, at 22.

⁷⁶ 47 U.S.C. § 230 (Supp. IV 1998) (emphasis added). The enactment of § 230 of the 1996 Act explicitly restricts

federal and state regulatory authority over the Internet and defined information services. *Id.* at § 230.

⁷⁷ Section 230 of the Act specifically mandates that the Internet-based industry shall remain "unfettered by Federal or State regulation." *Id.* at § 230(b)(2); see also Kennedy & Zallaps, *supra* note 72, at 25. The Commission has ancillary jurisdiction over other developing services, and it remains intimately involved in proceedings that will have a substantial impact on information services. See, e.g., *In re Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996*; Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities, WT Dkt. No. 97-198, FCC 99-181, para. 95 (rel. Sept. 29, 1999) (asserting ancillary jurisdiction over information services) (citing *United States v. Southwestern Cable Co.*, 392 U.S. 157 (1968) (holding that the Commission may employ ancillary jurisdiction where the Commission has subject matter jurisdiction over the communications at issue and the assertion of jurisdiction is required to carry out a statutory requirement)).

⁷⁸ Kennedy & Zallaps, *supra* note 72, at 17.

market and to protect themselves against future losses caused by IP telephony. Consequently, threatened telecommunications carriers have petitioned the FCC to regulate IP telephony service and software providers in order to balance market power.⁷⁹

Behind their entreaty to the FCC to regulate voice over the Internet, incumbent telecommunications carriers argue that current IP telephony services provide the functional equivalent of services offered by traditional telecommunications carriers.⁸⁰ Under the FCC's "functional equivalency" analysis, telecommunication regulation rests on "whether the services in question are different in any material, functional respect."⁸¹ Accordingly, incumbent telecommunications carriers argue that the FCC should regulate both services if end users perceive that IP telephony and incumbents perform the same functions.⁸² The newest phase of IP telephony renders quality of service ("QoS") and reliability comparable to traditional telephone carriers.⁸³ Voice quality complaints have eased through the installation of private networks coupled with refined technol-

ogy.⁸⁴ The ability to call directly from a telephone has further produced a more conventional service.⁸⁵ Thus, incumbents continue to drive for governmental protection from the looming threat posed by the IP telephony industry and to fear for their future without regulatory intervention.⁸⁶

The momentum behind the regulation argument, however, is also expressed as a concern for the USF.⁸⁷ The survival of this inherent social welfare policy depends on ongoing contributions from telecommunications carriers.⁸⁸ Contributions to the USF have supported basic telephone service to low-income and sparsely populated rural areas for seventy years in order to promote and sustain a national telephone network.⁸⁹ Policy-makers indifferent to the fate of incumbent carriers in the marketplace are concerned, however, about sustaining the USF once IP telephony vendors start to undermine the contributing profits of telecommunications carriers.⁹⁰ Although Congress has encouraged a competitive, deregulatory market thus far, lawmakers likely will begin to listen to the other side once this prediction transpires.⁹¹

⁷⁹ See Common Carrier Bureau Clarifies and Extends Request for Comment on ACTA Petition Relating to "Internet Phone" Software and Hardware, *Public Notice*, 11 FCC Rcd. 22,169 (1996) (requesting comments on an America's Carriers Telecommunication Association petition that asked the FCC to regulate PC-to-PC Internet telephony software and hardware providers as telecommunications carriers in order to protect the future of the trade group's 130 small regional long-distance carriers).

⁸⁰ The Commission applied the functional equivalency test to IP telephony to determine whether the "functional nature of the end-user offering" provides telecommunications. *1998 Universal Service Report to Congress*, 13 FCC Rcd. at 11,542, para. 86.

⁸¹ Frieden, *supra* note 71, at 64 (quoting *Ad Hoc Telecommunications Users Comm. v. FCC*, 680 F.2d 790, 794-95 (D.C. Cir. 1982) (holding that a "likeness" assessment determines whether services at hand differ in any materially functional aspect)).

⁸² *1998 Universal Service Report to Congress*, 13 FCC Rcd. at 11,544-45, paras. 89, 92. The Commission determined that from a functional standpoint, phone-to-phone IP telephony services provide voice transmission rather than information services when the "provider deploys a gateway . . . to create . . . a virtual transmission path between points on the [public-switched] telephone network over a packet-switched IP network." *Id.* at 11,544, para. 89. If the Commission concludes that certain IP telephony services provide interstate "telecommunications" directly offered to the public for a fee, than those phone-to-phone telephony services would be defined as "telecommunications carriers." *Id.* at 11,545, para. 92. Under this regulatory definition, the IP telephony service would be subject to Section 254(d)'s mandatory requirement to contribute to the USF. *Id.*

⁸³ Richard Stenger, *PC-to-Phone Redefining Long-Distance Calls*, CNN.COM, at <http://www.cnn.com/2000/TECH/computing/08/04/internet.phone/index.html> (last visited Sept. 4, 2000); COMMON QUESTIONS ABOUT TELEPHONY, *supra* note 30.

⁸⁴ Buechner, *supra* note 25, at 74.

⁸⁵ Supporting the Commission's *1998 Universal Service Report to Congress*, Chairman William Kennard commented that IP telephony services "seem . . . virtually indistinguishable from traditional [long-distance] telephone services." *1998 Universal Service Report to Congress*, 13 FCC Rcd. at 11,615 (separate statement of Chairman William E. Kennard).

⁸⁶ Kennard's Remarks Before the Voice Over the Net Conference, *supra* note 2 ("Rather than compete against IP telephony, incumbents get their cohorts in government to simply outlaw it. Criminalize it.").

⁸⁷ *1998 Universal Service Report to Congress*, 13 FCC Rcd. at 11,548, para. 98 (addressing concerns that traffic will shift from traditional telephone services to growing IP telephony services).

⁸⁸ See *Universal Service Order*, 12 FCC Rcd. at 8782, para. 6.

⁸⁹ FED. COMM. COMM'N, THE FCC'S UNIVERSAL SERVICE SUPPORT MECHANISMS, at <http://www.fcc.gov/cib/consumerfacts/universalservice.html> (last visited Jan. 11, 2001).

⁹⁰ Kennedy & Zallaps, *supra* note 72, at 19 (noting the Commission's fears that universal support mechanisms collected from only telecommunications carriers may be inadequate without regulating certain types of IP telephony services).

⁹¹ 147 CONG. REC. H3059 (2000) (statement of Rep. Dingell) ("These services will continue to migrate from traditional networks to the Internet and unless we act, the Universal Service Fund will be left to wither on the vine.").

V. WHERE DO THE FCC AND CONGRESS STAND IN THE DEBATE TODAY?

A. The FCC's 1998 *Universal Service Report to Congress*

Recognizing the growing complexities associated with new hybrid technologies, Congress directed the Commission under the Appropriations Act of 1997 to report on the status of implementing the 1996 Act's definitions.⁹² Congress required the Commission to review the definitions of "telecommunications service" and "information service" regarding hybrid services,⁹³ such as Internet telephony, and the application of those definitions to mandatory universal service support.⁹⁴

In its 1998 *Universal Service Report to Congress*, the Commission clarified that ISPs, which lease circuit connections from common carriers to operate an Internet backbone, are not actually telecommunications carriers but only providers of information services.⁹⁵ Because hybrid Internet technologies fall within the treatment accorded to ISPs, the Commission specifically reviewed IP telephony's legal status by evaluating the FCC's application of the statutory terms in the 1996 Act to PC-to-PC and phone-to-phone Internet technologies.⁹⁶ The Commission acknowledged that "certain 'phone-to-phone IP telephony' services lack the characteristics that would render them 'information services' within the meaning of the statute, and instead bear the characteristics of 'telecommunications services.'" ⁹⁷ The Commission tentatively intended the term "phone-to-phone IP telephony" to apply to services in which the provider satisfies the following conditions:

(1) it holds itself out as providing voice telephony or

facsimile transmission service; (2) it does not require the customers to use CPE [Customer Premises Equipment, including telephone handsets] different from that . . . necessary to place an ordinary touch-tone call . . . over the public switched telephone network; (3) it allows the customer to call telephone numbers assigned in accordance with the North American Numbering Plan . . . and (4) it transmits customer information without net change in form or content.⁹⁸

In attempting to reclassify phone-to-phone IP telephony, the Commission cautiously retreated from precedent in the 1998 *Universal Service Report to Congress*.⁹⁹ Although the Commission first showed its willingness to reconsider defining phone-to-phone telephony providers as "telecommunications carriers," the FCC then announced the need for a more complete record before accurately distinguishing between phone-to-phone and other forms of IP telephony.¹⁰⁰ Reluctant to burden the Internet with regulation without more information, Chairman Michael Powell stated that "[i]f innovative new IP services were all thrown into the bucket of telecommunications carriers, we would drop a mountain of regulations, and their attendant costs, on these services and perhaps stifle innovation and competition in direct contravention of the Act."¹⁰¹ The Commission, however, accepted the blurring of telecommunication and information services with definitions "based purely on technology,"¹⁰² by instead opting to define services based on "the essential functionality provided to users."¹⁰³ Once the FCC is able to determine conclusively that variations of phone-to-phone IP telephony services are interstate telecommunications that provide services to the public for a fee, those providing the services then will be required to contribute to the USF as "telecommunications carriers."¹⁰⁴ Consequently, the Commission declined to define a brightline

⁹² Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act of 1998, Pub. L. No. 105-119, 111 Stat. 2440, 2451 (1997).

⁹³ 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,507, para. 13.

⁹⁴ *Id.* at 11,508, para. 14.

⁹⁵ Oxman, *supra* note 5, at 23; see also 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,527, para. 52.

⁹⁶ 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,508, para. 14.

⁹⁷ *Id.* at 11,541, para. 83.

⁹⁸ *Id.* at 11,541, 11,543-44, paras. 83, 88; see also 47 U.S.C. § 153(14) (defining the term "customer premises equipment" as the "equipment employed on the premises of a person (other than a carrier) to originate, route, or terminate telecommunications").

⁹⁹ Although the Commission has never formally deter-

mined the legal status of IP telephony, the Internet and all Internet-related services have enjoyed regulatory freedoms as "information services" under the 1996 Act. 47 U.S.C. § 153(20); see also Oxman, *supra* note 5, at 26 (noting the Commission's 30-year deregulatory open market policy that governs the Internet).

¹⁰⁰ 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,548-49, para. 98.

¹⁰¹ *Id.* at 11,623 (separate statement of Comm'r Michael Powell).

¹⁰² *Id.* at 11,501, para. 98.

¹⁰³ *Id.* at 11,543, para. 86; see also *id.* at 11,636 (dissenting statement of Comm'r Furchtgott-Roth) (asserting that regulation is not only "artificial and fragile, but also exposes the futility of assessing fees on specific Internet content").

¹⁰⁴ *Id.* at 11,545, para. 92 (citing the 1996 Act's mandatory requirement for telecommunications carriers to

rule in the 1998 *Universal Service Report to Congress*, which found IP telephony not subject to telecommunications regulation. The Commission, however, conceded that it would examine each Internet telephony service on an individual basis to determine whether the offering resembles a telecommunications service or an information service.¹⁰⁵

B. Reconsidering Regulation

Three years have passed since the FCC announced that it would reconsider regulating phone-to-phone IP telephony on a case-by-case basis in its 1998 *Universal Service Report to Congress*, and the Commission continues to forbear regulating the Internet.¹⁰⁶ In his remarks before the Voice Over Net Conference, former Chairman Kennard heralded the Commission's deregulatory policy by warning that "regulation is too often used as a shield to protect the status quo from

new competition—often in the form of smaller, hungrier competitors—and too infrequently as a sword—to cut a pathway for new competitors to compete by creating new networks and services."¹⁰⁷ He reassured members of the IP telephony industry that "[i]t just doesn't make sense to apply hundred-year-old regulations meant for copper wires and giant switching stations to the IP networks of today."¹⁰⁸ In light of former Chairman Kennard's remarks, the Commission appears to be postponing the decision of whether to regulate IP telephony services as "telecommunications services" under the 1996 Act or whether to eliminate the statutory definitions that determine USF contributions.¹⁰⁹ Recognizing that "[t]he PSTN will be around for at least a decade and maybe more,"¹¹⁰ and projecting its replacement by the advanced telecommunications services of cable Internet¹¹¹ and Digital Subscriber Line ("DSL") services,¹¹² IP telephony appears to have found its way into the mainstream.¹¹³

contribute to universal support mechanisms under 47 U.S.C. § 254(d)).

¹⁰⁵ *Id.* at 11,544–45, paras. 90–91 (concluding that after the Commission has a "more complete record focussed on individual service offerings," it will treat forms of phone-to-phone IP telephony services that meet § 254(d)'s mandatory universal service requirements as "telecommunications carriers").

¹⁰⁶ Although the Commission's regulatory policy remains uncertain, Kevin Werbach, former attorney for the FCC's Common Carrier Bureau, assured that "[t]he commission is not interested in refereeing between technologies." John Simons, *Wrestling Over the Future*, U.S. NEWS & WORLD REP., Apr. 15, 1996, at 56.

¹⁰⁷ Kennard's Remarks Before the Voice Over the Net Conference, *supra* note 2.

¹⁰⁸ *Id.*

¹⁰⁹ See Common Carrier Bureau Clarifies and Extends Request for Comment on ACTA Petition Relating to "Internet Phone" Software and Hardware, *Public Notice*, 11 FCC Rcd. 22,169, 22,169 (1996). Moreover, the Commission's recent *Notice of Inquiry* gathered information in its first step to determine whether to treat high-speed cable modem services as telecommunications carriers under the 1996 Act. The Commission's willingness to adopt rules and regulations governing cable modem services, currently treated under the safeharbor of information services, may open Pandora's box to further regulation of Internet-based services such as IP telephony. *In re Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, *Notice of Inquiry*, 15 FCC Rcd. 19,287, 19,287, para. 1 (2000).

¹¹⁰ Pappalardo & Greene, *supra* note 32, at 5 (quoting MCI WorldCom's Frank Nigro, Dir. of Converged Services). The PSTN "refers to the local, long-distance, and international phone system which we use everyday." NEWTON'S TELECOM DICTIONARY 665 (15th ed. 1999).

¹¹¹ As of July 1, 1999, 800,000 North American homes subscribed to cable modem services, equaling roughly 80 to

90% of the high-speed market. PETER W. HUBER ET AL., FEDERAL COMMUNICATIONS LAW § 11.2.23 (2d ed. 1999) [hereinafter HUBER] (defining a cable modem as "[a] high-speed Internet access technology that uses a customer's cable wire"). The cable modem converts data transmissions by connecting the cable television wiring to the user's computer through an Ethernet connection. Barbara Esbin, *Internet Over Cable: Defining the Future in Terms of the Past*, 7 COMMLAW CONSPECTUS 37, 91 (1999) (citing the NAT'L TELEVISION ASSOCIATION ("NCTA") TELECOMMUNICATIONS AND ADVANCED SERVICES PROVIDED BY THE CABLE TELEVISION INDUSTRY 26 (Apr. 1996)).

¹¹² DSL provides high-speed Internet access using existing copper wires by deploying technology that increases the bandwidth capacity to allow telephone and Internet service to travel over the same wire. *In re Deployment of Wireless Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, *Third Report and Order in CC Dkt. No. 98-147 and Fourth Report and Order in CC Dkt. No. 96-98*, 14 FCC Rcd. 20,912, 20,919, para. 8 (1999) (projecting DSL deployment levels at 2,107,000 by the end of 2000, 5,103,000 lines by the end of 2001 and 7,655,000 lines by the end of 2002); Donna M. Lampert et al., *Overview of Internet Legal and Regulatory Issues*, 544 PLI/PAT 179, 191 (1998) (observing that the proliferation of high-speed Internet access offered through DSL has begun to confront cable modem services with serious competition); *In re Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, *Report*, 14 FCC Rcd. 2398, 2404, 2447, paras. 12, 91.

¹¹³ The increasing prevalence of DSL lines, cable modems and fiber networks, which are "fast enough to support high-quality, real-time interactive voice[.]" fosters the growth of IP telephony services. Scott Bradner, *There May be*

C. Congressional Intent and the Wait-and-See Approach

In response to mounting political pressures and FCC recommendations, Congress will likely re-introduce legislation that, if passed, will resolve the Commission's predicament of whether and how to regulate Internet telephony.¹¹⁴ The debate in Congress mirrors the debate in the industry as representatives and senators voice concerns on both sides of the regulatory issue.¹¹⁵ Finding that Internet telephony services provide interstate telecommunications, Senators Conrad Burns (R-MT), John Rockefeller (D-WV), Olympia Snowe (R-ME) and Ted Stevens (R-AK) have lent their support to arguing for treatment of IP telephony providers as a "telecommunications carrier" in order to secure contributions to the USF.¹¹⁶ Senators John F. Kerry (D-MA), John McCain (R-AZ) and Ron Wyden (D-OR), however, oppose application of regulations to Internet telephony.¹¹⁷

1. Proponents of Saving the Universal Service Fund

Representative Fred Upton's (R-MI) introduc-

tion of H.R. 1291, the "Internet Access Charge Prohibition Act of 2000," attempted to halt Congress' passive "[wait-and-see]" approach to regulate IP telephony.¹¹⁸ Since its passage by the House on May 16, 2000, the bill has stalled in the Senate.¹¹⁹ As proposed, this bill would prohibit time-measured charges imposed on ISPs for mandatory universal service contributions.¹²⁰ However, Congress opened the door in this bill for future regulation of voice over IP by proposing to amend Section 254 of the Communications Act to state that "[n]othing . . . shall preclude the Commission from imposing access charges on the providers of Internet telephone services."¹²¹ In expressing a need to invite future regulation of Internet telephony, Representative John Dingle (D-MI) remarked that:

[t]hese services will continue to migrate from traditional networks to the Internet and unless we act, the Universal Service Fund will be left to wither on the vine. That spells significant trouble for local phone rates for all consumers, but particularly those who live in rural areas and the working poor of those who live in big cities.¹²²

By not deciding the issue of regulating Internet

Hope Yet, NETWORK WORLD FUSION, at <http://www.nwfusion.com/columnists/2000/0828bradner.html?nf> (Aug. 28, 2000). The FCC found that high-speed lines increased by 57% overall with 4.3 million homes and small businesses connected in 2000, compared to 2.8 million in 1999; DSL lines increased by 157% to almost one million lines in 2000 from 370,000 in 1999; cable Internet lines increased 59% to 2.2 million lines in 2000 from 1.4 in 1999; and fiber wireless technologies increased 18% in 2000. Press Release, Federal Communications Commission, FCC Releases Data on High-Speed Services for Internet Access, at http://www.fcc.gov/Bureaus/Common_Carrier/News_Releases/2000/nrcc0054.html (Oct. 31, 2000).

¹¹⁴ Internet Access Charge Prohibition Act of 2000, H.R. 1291, 106th Cong. (2000).

¹¹⁵ 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,517, 11,520, 11,542, paras. 34, 38, 85.

¹¹⁶ *Id.* at 11,542 para. 85 ("IP telephony providers offer interstate telecommunications services and, consequently should contribute to universal service support mechanisms.").

¹¹⁷ *Id.* at 11,520, para. 38 ("Rather than expand regulation to new service providers, a critical goal of the 1996 Act was to diminish regulatory burdens as competition grew." (quoting Sen. John Ashcroft)).

¹¹⁸ H.R. 1291, 106th Cong. (2000).

¹¹⁹ Although the Senate received the bill May 17, 2000, the Senate did not schedule to vote on the bill before 106th Congress recessed December 20, 2000. The issue of whether to regulate Internet telecommunications, however, will remain "alive for the 107th Congress." Telephone Interview with Cliff Riccio, Legislative Assistant for the House's Committee on Commerce (Oct. 23, 2000) (on file with author).

¹²⁰ H.R. 1291, 106th Cong. § 2 (2000). The bill was de-

signed to protect the Internet from taxation; however, Congress exempted IP telephony from the Internet bill to carve out the possibility of taxing Internet telephony services in the future. Spokesman for Net2Phone, Bart Bartilozzi, lamented that "H.R. 1291 was meant as a positive bill with the Internet in mind, but at the last minute they added something that would allow them to tax ITSPs." Lisa Napoli, *Net Telephony Firms Feel the Squeeze*, MSNBC.COM, at <http://www.msnbc.com/news/418193.asp> (June 8, 2000) (quoting Bart Bartilozzi). In criticizing the obtrusive nature of the bill, Bartilozzi also parodied the difficulties in regulating IP telephony packets: "We were looking at your time online, Bart, and for 17 minutes you were using it for voice-enabled technology?" *Id.* (quoting Bill Bartilozzi).

¹²¹ H.R. 1291, 106th Cong. § 2 (2000).

¹²² 147 CONG. REC. H3059 (2000) (statement of Rep. Dingell) (observing that these are the same Americans who are stuck on the wrong side of the Digital Divide and are least able to take advantage of high-tech alternatives); see also NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION ("NTIA"), DEPARTMENT OF COMMERCE, FALLING THROUGH THE NET: TOWARD DIGITAL INCLUSION, available at <http://www.ntia.doc.gov> (Oct. 2000) [hereinafter NTIA REPORT] (reporting that although telecommunications and the information gap in America between the information "haves" and "have nots" has narrowed, computer and the Internet use still varies considerably according to income, race, and ethnicity); see also Press Release, The White House, Statement by the President: Digital Divide, at http://www.whitehouse.gov/library/hot_releases/October_162000.html (Oct. 16, 2000) (addressing the current progress in bridging the Digital Divide, President Clinton stated that he was "pleased that many low-income, rural . . . households are beginning to 'get connected' at rates faster than the national average").

telephony, the "bill leaves this important debate for another day . . . for Congress and the FCC to settle at a future time."¹²³ This bill attempts to regulate the Internet by limiting universal service contributions based on a measure of time. However, the bill's IP telephony access charge exception would encourage future FCC regulation of IP telephony.¹²⁴

2. *Opponents of Regulating Internet Telephony*

Legislators fearful of H.R. 1291's Internet telephony exception to regulation reacted quickly by proposing their own bill in the House on June 27, 2000, entitled the "Internet Telephony Access Charge Prohibition Act of 2000."¹²⁵ Introduced by Representative Edward Markey (D-MA), H.R. 4769 would amend Section 254 of the 1996 Act to prohibit the FCC from imposing time-based access and universal service charges on IP telephony providers, thereby counteracting H.R. 1291.¹²⁶ In support of his bill to maintain flat rates on Internet services, Rep. Markey argued that "[m]ost shocking . . . is the fact that the bill [H.R. 1291] includes a legislative 'green light' to the FCC to support per minute fees on [I]nternet telephone calls by specifically exempting IP telephony from H.R. 1291's . . . access charge prohibition."¹²⁷ Although this bill is still pending before the House, the Commerce Committee recently attempted to block the Commission from imposing access charges on Internet telephony again by adopting an amendment to H.R. 4445, the "Reciprocal Compensation Adjustment Act of 2000."¹²⁸

VI. THE UNIVERSAL SERVICE FUND AND DEREGULATION DO NOT MIX

A. Origins of the Universal Service Fund

Congress first emphasized universal service as an important telecommunications goal under the Communications Act of 1934 (the "1934 Act"), as amended, by authorizing the FCC "to make available, so far as possible, to all the people of the United States . . . rapid, efficient, nation-wide, and world-wide wire and radio communication service . . . at reasonable charges."¹²⁹ The turn of the century concept of offering one network to connect all customers subsequently fostered the expansion of the country's monopolistic telephone system.¹³⁰ Although the 1934 Act failed to provide any statutory mechanisms to subsidize an actual universal service program, a complicated system of cross subsidies sustained the initial fund to provide telephone service for homes throughout the United States.¹³¹ Revenues from profitable urban areas were used to finance wiring in sparsely populated rural areas. Profits generated from long-distance and business customers funded local residential calls.¹³² As the telephone system developed, large profits later supported telephone service for low-income households.¹³³ Increased telephone competition arising from the divestiture of AT&T in 1984 and the creation of seven "Baby Bells," however, challenged this long-standing complex system of cross subsidies that supported the original USF.¹³⁴

Under the 1996 Act, Congress formally restruc-

¹²³ *Internet* 146 CONG. REC. H3058 (2000) (statement of Rep. Tauzin).

¹²⁴ It should be noted that H.R. 1291 would not prohibit local exchange carriers from imposing access charges on ISPs, as long as they are fixed rates, not time-measured and the proceeds are not used to support universal service obligations. H.R. 1291, 106th Cong. (2000).

¹²⁵ H.R. 4769, 106th Cong. (2000).

¹²⁶ *Id.* (currently referred to the House's Committee on Commerce).

¹²⁷ 146 Cong. Rec. E1126 (2000) (statement of Rep. Markey) (introducing the Internet Telephony Access Charge Prohibition Act of 2000).

¹²⁸ H.R. 4445, 106th Cong. (2000) (amendment introduced by Rep. Christopher Cox and adopted by the Subcom-

mittee on Telecommunications Trade & Consumer Protection on Sept. 18, 2000). This amendment, which directed that "the Commission shall not impose access charges . . . on Internet telephony," did not survive the Committee on Commerce markup. *Id.*

¹²⁹ 47 U.S.C. § 151 (1994 & Supp. IV 1998).

¹³⁰ JAMES R. RIEHL, CRS REPORT FOR CONGRESS, TELEPHONE BILLS: CHARGES ON LOCAL TELEPHONE BILLS 12, 13, (updated July 7, 2000).

¹³¹ HUBER, *supra* note 111, at 540-41.

¹³² RIEHL, *supra* note 130, at 13.

¹³³ *Id.*

¹³⁴ *Id.* (noting that today there are only three "Baby Bells," including Bell South, Pacific Bell and Bell Atlantic, which has since become Verizon).

tured the universal service system by creating explicit subsidies as an "equitable and nondiscriminatory"¹³⁵ means of collecting universal service support through Section 254.¹³⁶ The implementation of these statutory support mechanisms to provide affordable basic service to all Americans through paid-for contributions from common carriers providing interstate telecommunications services led to the development of the USF.¹³⁷ Section 254(c)(1) of the 1996 Act first codified the social welfare purpose and statutory mechanisms of the USF as:

[A]n evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services. The Joint Board in recommending, and the Commission in establishing, the definition of the services that are supported by Federal universal support mechanisms shall consider the extent to which such telecommunications services—(A) are essential to the education, public health, or public safety; (B) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers; (C) are being deployed in public telecommunications networks by telecommunications carriers; and (D) are consistent with the public interest, convenience, and necessity.¹³⁸

The codification of this universal service mandate consequently led to the extension of the PSTN to high-cost and rural areas, thereby creating a more valuable service through the widespread use of telephones.¹³⁹ The root of the universal support mechanisms rests in creating social equality, but the economic benefits from laying the network foundation also created the nation's Internet backbone.¹⁴⁰

B. Benefactors and Beneficiaries Under the USF

Congress established a Federal-State Joint Board to define which services would receive funding from universal service support mechanisms through the 1996 Act.¹⁴¹ As required under Section 254(a)(2), the Commission implemented the Joint Board's recommendations within fifteen months of the 1996 Act's enactment with its *Universal Service Order* released on May 8, 1997.¹⁴² The Commission's *Universal Service Order* determined which services would receive universal service support and directed that states regulate affordability standards for such services.¹⁴³

In order to qualify as a mandatory contributor under Section 254(d): "(1) a telecommunications carrier must offer 'interstate' 'telecommunications'; (2) those interstate telecommunications must be offered 'for a fee'; and (3) those interstate telecommunications must be offered 'directly to the public, or to such classes of users as to be effectively available to the public.'" ¹⁴⁴ This definition precludes information services, including ISPs and IP telephony services, from contributing and only explicitly obligates local- and long-distance telecommunication services to contribute approximately 5.8% of their annual revenues to the USF.¹⁴⁵ Once deemed a qualified contributory carrier, a carrier must provide a specific bundle of services.¹⁴⁶ Of the money given by the contributing carriers to support the fund, the FCC

¹³⁵ 47 U.S.C. § 254(b)(4) (Supp. IV 1998).

¹³⁶ *Id.* § 254(d). Before Congress established explicit subsidies under the 1996 Act, increased telephone rates supported the USF. The implementation of explicit funds did not mandate that telecommunications carriers impose a specific universal service charge on their customers. However, many carriers have chosen to recover their universal service obligations by charging a monthly fee, typically named the "federal universal service charge" or "universal service connectivity charge." RIEHL, *supra* note 130, at 13.

¹³⁷ 47 U.S.C. § 254(d). Although § 254 provides that all "telecommunications carriers" must contribute to universal service support mechanisms designed to preserve and advance service, the Commission also may require "any other provider of interstate telecommunications" to contribute "if public interest so requires." *Id.*

¹³⁸ *Id.* at § 254(c)(1).

¹³⁹ Press Release, Federal Communications Commission, Statistics of Communications Common Carriers, at http://www.fcc.gov/Bureaus/Common_Carrier/News_Releases/2000/nrcc0043.html (Aug. 11, 2000) (announcing that 94.6% of all U.S. households had telephone service in 1999

compared to only 36% of households with telephone service in 1939).

¹⁴⁰ Oxman, *supra* note 5, at 5, 15.

¹⁴¹ 47 U.S.C. § 254(a)(1). The Joint Board subsequently issued its recommendation on which services should be supported by federal funding. *In re Federal-State Joint Board on Universal Service, Recommended Decision*, 12 FCC Rcd. 87, 143-45, paras. 110, 134 (1996).

¹⁴² *Universal Service Order*, 12 FCC Rcd. at 9261, paras. 984-90.

¹⁴³ TELECOMMUNICATIONS LAW, REGULATION, AND POLICY 470, 471 (Walter Saprionou & William H. Read eds., 1998).

¹⁴⁴ *Universal Service Order*, 12 FCC Rcd. at 9173, para. 777 (quoting 47 U.S.C. §§ 153(22), 153(43), 153(44), 153(46)).

¹⁴⁵ Proposed Second Quarter 2000 Universal Service Contribution Factor, *Public Notice*, 15 FCC Rcd. 16,469 (Mar. 7, 2000).

¹⁴⁶ 47 U.S.C. §§ 254(e), 214(e). Section 254 embodies the Act's provisions for arranging subsidized Internet rates to schools, libraries, and health care providers. Specifically, § 254(h)(1)(B) provides that "[a]ll telecommunications carriers shall provide such services to elementary schools, second-

budgets \$2.25 billion per year¹⁴⁷ to fund school and library discounts,¹⁴⁸ and maintains an additional annual fund of \$400 million for rural health care providers.¹⁴⁹

C. Reaching a Compromise to Secure the Future of the USF

The importance of the USF dates back to Congress establishing implicit subsidies for universal support services under the 1934 Act as a form of social welfare policy to provide basic telephone service to all Americans at an affordable rate.¹⁵⁰ The FCC enforced this congressional mandate to provide universal service by ensuring that common carriers extended service to all homes at a reasonable cost.¹⁵¹ Consumers living in sparsely populated areas depend on universal service subsidies to avoid high telecommunications costs.¹⁵² Without subsidies allocated to universal support in rural areas, profit-motivated telecommunications carriers would be forced to charge "prohibitively high rates."¹⁵³ The USF support mechanisms enable carriers to serve unprofitable, low-density areas. Without USF support, carriers would concentrate their business in highly popu-

lated and extremely profitable urban centers.¹⁵⁴ Both the urban and the rural poor urgently need universal support subsidies in order to have affordable standard telephone access.¹⁵⁵

The question of whether IP telephony providers should contribute to the USF has been a catalyst for the recent wave of competing legislation introduced in Congress on the issue of Internet regulation.¹⁵⁶ The telecommunication-based universal support subsidies may soon experience severe cuts as common carriers begin offering IP telephony services to compete with existing "information services."¹⁵⁷ The FCC anticipated telephone migration to the Internet and cautioned that "[i]f such providers are exempt from universal support contribution requirements, users and carriers will have an incentive to modify networks to shift traffic to Internet protocol and thereby avoid paying into the universal service fund."¹⁵⁸ Congressman John Dingell echoed the Commission's concerns that "Internet telephony may evade the responsibility of contributing to support the Universal Service Fund, a fund that ensures that all Americans have access to affordable telephone service."¹⁵⁹

Unless Congress passes legislation akin to H.R.

dary schools, and libraries for educational purposes at rates less than the amounts charged for similar services to other parties." 47 U.S.C. § 254(h)(1)(B). Section 254(h)(2)(A) further directs the Commission to "enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all public and non-profit elementary and secondary school classrooms, health care providers and libraries." 47 U.S.C. 254(h)(2)(A).

¹⁴⁷ In less than five years, the USF today has grown from nearly \$750 million earmarked in 1995 to \$2.5 billion. UNIVERSAL SERVICE TASK FORCE, FEDERAL COMMUNICATIONS COMMISSION, PREPARATION OF ADDRESSING UNIVERSAL SERVICE ISSUES: A REVIEW OF CURRENT INTERSTATE SUPPORT MECHANISMS 5, at http://www.fcc.gov/Bureau/Common_Carrier/Reports/univserv.txt (1996).

¹⁴⁸ The 1996 Act's newly established subsidy, "E-rate," further requires qualified contributors to provide telecommunications and related services at a 20% to 90% discount to eligible schools and libraries. Angele A. Gilroy, *Telecommunications Discounts for Schools and Libraries: The "E-Rate" Program and Controversies*, at <http://www.cnle.org/nle/st-52.html> (Sept. 15, 2000).

¹⁴⁹ See *Universal Service Order*, 12 FCC Rcd. at 9002, 9093, paras. 425, 608.

¹⁵⁰ Oxman, *supra* note 5, at 15.

¹⁵¹ *Id.*; see also 47 U.S.C. § 201 (Supp. IV 1998).

¹⁵² 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,504, para. 6.

¹⁵³ *Id.*

¹⁵⁴ Sean M. Foley, *The Brewing Controversy over Internet Ser-*

vice Providers and the Universal Service Fund: A Third Generation Interpretation of Section 254, 6 COMMLAW CONSPECTUS 245, 248 (1998) [hereinafter Foley]; 47 U.S.C. § 254 (b)(3) ("Consumers . . . in rural, insular, and high cost areas should have access to telecommunications and information services . . . that are available at rates that are reasonably comparable to [those] . . . in urban areas.").

¹⁵⁵ The most vulnerable telecommunications users, however, are impoverished consumers left on the other end of the Digital Divide. NTIA REPORT, *supra* note 122, at xvi, 8-9. Unfortunately, the poor who could most benefit from advances made in the digital revolution are unlikely to have the means to take advantage of such cost savings found in IP telephony services. 147 CONG. REC. H3061 (2000) (statement of Rep. Dingell).

¹⁵⁶ 147 CONG. REC. H3059 (2000) (statement of Rep. Dingell) (pleading that the "majority . . . address this serious inequity [the requirement for only traditional telephone networks to support universal service] with due haste so that the American people can be duly protected against the sharp rise in price for one of their most essential communications needs.").

¹⁵⁷ AT&T plans to utilize its own Internet backbone to support voice services by the end of 2000, while MCI WorldCom is building an IP network to carry Internet telephony services. Pappalardo & Greene, *supra* note 32, at 2.

¹⁵⁸ 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,549, para. 98.

¹⁵⁹ 147 CONG. REC. H3059 (2000) (statement of Rep. Dingell).

1291, "Prohibiting Access Charges on the Internet," and invites the FCC to regulate Internet telephony, the status quo deregulatory policy will survive.¹⁶⁰ As articulated by Commissioner Ness, the FCC still hopes to respect its competing goals of: "(1) safeguard[ing] universal service support, including that needed for high-cost areas, and simultaneously (2) avoid stifling the development or deployment of innovative new information systems."¹⁶¹ Thus, moves toward regulation will not occur until Internet telephony services undercut the customer base of traditional carriers and thereby undermine carrier contributions to the USF. Some policy-makers struggling with this dilemma propose reclassifying Internet telephony services as "telecommunications carriers" in order to collect USF revenue from these services. This solution, however, appears questionable considering the problems of regulating software vendors, the growing involvement of common carriers in the IP telephony market and the inability to distinguish voice from data packets sent via the Internet.¹⁶² The counter solution of redefining the telecommunications industry through elimination of the statutory definitions of telecommunications carrier and information services, which distinguish who must contribute to the USF,¹⁶³ appears more equitable and just for incumbent carriers now offering IP telephony services to compete with new IP telephony providers. If the current definitional categories for USF contribution purposes were eliminated, other regulatory means would need to replace such methods for determining mandatory contributors.

D. Restructuring USF Contributions

As technologies continue to converge, the 1996 Act's neat categories defined less than five years ago will not be able to withstand the impending contribution drain from the USF.¹⁶⁴ The USF is essentially a social welfare policy supported by a tax on interstate communications,¹⁶⁵ thus the government could treat it accordingly. If Congress finds it in the public interest to continue a deregulatory Internet policy, then it could appropriate additional USF funds through the imposition of a federal tax.¹⁶⁶ The replacement of regulatory subsidies with a neutral tax or fee is a viable solution to generating USF funds.¹⁶⁷

By imposing revenue-based fees on both Internet and traditional telecommunications services, IP telephony start-ups with de minimis earnings could escape contribution requirements at least initially.¹⁶⁸ Congress also could generate sufficient funds to sustain the \$2.25 billion USF while not billing innovative technologies through taxation. A tax contingent on gross profits would not suffocate newcomer Internet telephony vendors. As an alternative to this proposed corporate tax plan on IP telephony, the imposition of a federal income tax could recover lost USF revenue through citizen contributions. Telecommunication carriers already pass their USF burden on to their customers by increased telecommunications service costs.¹⁶⁹ For example, long-distance consumers indirectly pay their common carrier's obligation to the USF by paying monthly universal service charges based on the call volume. Although

¹⁶⁰ *Id.*

¹⁶¹ 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,621 (separate statement of Comm'r Susan Ness).

¹⁶² Werbach, *supra* note 36, at 39-40.

¹⁶³ Foley, *supra* note 154, at 258.

¹⁶⁴ *Id.* at 246 (discussing the Commission's dilemma of "applying outmoded terminology . . . to a new regulatory context").

¹⁶⁵ Contributions to the USF are made by any "telecommunications carrier that provides interstate telecommunications services." 47 U.S.C. § 254(d). Thus, only state-to-state long distance and international calls are in essence taxed, unlike intrastate long-distance calls.

¹⁶⁶ Samahon, *supra* note 1, at 516-17 (noting that the taxes collected could be placed into the general tax fund and then later distributed, or deposited directly into a specific fund designated for universal service support).

¹⁶⁷ See Joseph D. Kearney & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 COLUM. L. REV. 1323, 1347, 1348 n.113 (1998) [hereinafter Kearney & Mer-

rill] (arguing that economists advocate a competitively neutral mechanism such as general tax revenues to fund universal service obligations).

¹⁶⁸ Congress could "avoid stifling . . . new information services" by using its constitutionally granted taxing powers instead of imposing tariffs on both incumbent carriers and new IP telephony services to support the USF. Samahon, *supra* note 1, at 517 (quoting 1998 *Universal Service Report to Congress*, 13 FCC Rcd. at 11,621 (separate statement of Comm'r Ness)).

¹⁶⁹ Under the current regulatory subsidy scheme, few consumers realize that the universal service charge paid to their common carrier is actually subsidizing rural and low-income consumers' service, as well as subsidizing Internet access for schools, libraries and rural health care providers. Thus, if an unpopular neutral taxation system replaces the concealed regulatory fees, the government will likely face politicized opposition. Kearney & Merrill, *supra* note 167, at 1347-48.

income taxes are always unpopular, consumers already are paying for corporate taxes through added fees and higher rates.¹⁷⁰

Both of these proposed tax options serve the purpose of safeguarding the USF's future without mandating that incumbent Internet telephony services submit to burdensome "telecommunications carrier" regulations as currently interpreted under the 1996 Act.¹⁷¹ By replacing regulatory subsidies with federal taxation, a compromise is achieved between the competing goals of a deregulatory policy that fosters competition and innovation while also sustaining the social welfare policy underlying the USF.¹⁷²

VII. CONCLUSION

Although the impact will not be immediate, Congress should prepare both the telecommunications market and telecommunications consumers to migrate toward Internet telephony. The protection from deregulation now seems uncertain.¹⁷³ Whenever it happens, Congress' first regulatory foray into the digital world will meet strong opposition. The FCC already has shown its accept-

ance of treating certain IP telephony services in the same manner as their telecommunications carrier counterparts, but revamping a thirty-year-old regulatory process will prove laborious and controversial. The nonregulated status benefits IP telephony, but threatens both traditional telecom providers and the USF. This threat, along with the ability of IP telephony to provide comparable services to traditional telecommunications services on a technical level, could lead ultimately to the regulation of Internet telephony.¹⁷⁴ Or, it could lead to congressionally mandated contributions to the USF by IP telephony providers who currently face no such mandatory or regulatory duty. Whether the government decides to deregulate the telecommunications industry and recover universal service funds through more traditional methods of taxation, or decides to regulate Internet telephony services as telecommunications carriers, remains an open question. However, the need for the government to start planning now in order to cope with a potentially disastrous USF deficit should be foremost on the congressional agenda.

¹⁷⁰ Poorer citizens, however, would have to contribute to the universal support mechanisms through income taxes, which defeats the purpose of ensuring universal access by providing subsidized rates to impoverished consumers.

¹⁷¹ Critics of the universal service system argue that "tax deductions, 'telephone stamps,' or prepaid debit cards" should replace current explicit subsidies. HUBER, *supra* note 111, at 549; Milton Mueller, *Telecommunications Access in the Age of Electronic Commerce: Toward a Third-Generation Universal Service Policy*, 49 FED. COMM. L.J. 655, 670-71 (1997) (offering the use of prepaid debit cards as a creative solution to make universal service compatible with today's competition in the telecommunications market by exemplifying the United Kingdom's success with pre-paid cards in the electric industry).

¹⁷² Samahon, *supra* note 1, at 516 (suggesting that current universal subsidies be replaced with income tax revenues); Kearney & Merrill, *supra* note 167, at 1347-48 (predicting that universal service funds may eventually be generated through a "competitively neutral tax," which would

maintain " 'competitive neutrality' " principles set forth in the *Universal Service Order* (quoting *Universal Service Order*, 12 FCC Rcd. at 8799-8803, paras. 46-52)).

¹⁷³ In the House, Rep. Dingell and Rep. John Upton, Members of the House Commerce Committee's Subcommittee on Telecommunications, Trade & Consumer Protection, and supporters of H.R. 1291, likely will continue to work to pass comparable legislation that encourages future regulation of IP telephony for contributions to the USF. However, Sen. John McCain, Chairman of the Senate Commerce, Science & Transportation Committee, and a strong proponent of maintaining a deregulatory Internet policy, likely will push counteractive legislation resembling H.R. 4679, the *Internet Telephony Prohibition Act of 2000*, through the Senate.

¹⁷⁴ In a step closer toward regulation, the U.S. District Court of Colorado recently imposed access charges on Internet telephony service providers. *Quest Corp., Inc. v. IP Telephony, Inc.*, No. 99CV8252 slip op. (D. Colo.). Jan. 12, 2001).